Amazon’s Medicinal Plants: A New Solution for Malaria Treatment?

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Editorial

The transmission of Plasmodium falciparum, known as being responsible for the lethal and severe form of Malaria, has been importantly reduced in the last few years [1]. However, the effective fight against the disease is still facing some difficulties due to the high capacity of adaptation to the treatment of parasite, increasing its resistance to available medicaments [2]. Indeed, the appearance of P. falciparum chloroquine-resistant, comprising the combination of chloroquine substitution were then synthesized, such as mefloquine, halofantrine, a fenantromethanol that has a more cytotoxic action similar to chloroquine. Still, mefloquine, a more effective medicine and widely adopted in Asia for the treatment of malaria, is active even in a single dose, but it is toxic and very expensive, in addition to reports of the onset of drug resistance.

In the 80’s, a new group of antimalarials come to light, led by artemisinin, extracted from the plant Artemisia annua, employed for millennia into Chinese’s medicine to treat febrile cases [8]. Semi synthetic artemisinin derivatives, like artemether, artesunate and arteter, are also in clinical use, already. Despite causing rapid clearance of blood parasites, this group of drugs is not able to eliminate parasites and infection might reappear, a phenomenon called recrudescence, being inadvisable their administration as monotherapy. In fact, OMS recommends the “Artemisinin-based Combination Therapy (ACT)” for malaria treatment, worldwide employed for the fight against P. falciparum chloroquine-resistant, comprising the combination of artemisinin derivatives with antimalarials, such as mefloquine, lumefantrine, and others [7].

On the other hand, as feared, the reduction of P. falciparum response to monotherapy with artemisin was reported in 2012, and resistance is well established on Camboja’s and Thailand’s border [9].

Therefore, there is a consensus that the investigation of new antimalarial drugs is urgent. According to this, plants commonly utilized for malaria treatment can give valuable contribution [10].

Into Brazilian’s Amazon a large number of vegetables are routinely utilized for the treatment of febrile and malarial diseases. All this “inlander medicine” was inherited from the Indians, first inhabitants of this region, with the addition of African and European contributions, too. However, much is still needed in order to obtain therapeutic drugs for the extracts of this plant. Nevertheless, the therapeutic potential of Amazon’s plants is still a universe that, if properly explored, will lead to the development of more effective drugs for the treatment of malaria and many other diseases of today.

Among the species evaluated up to the moment, the most promising is Eleutherine plicata (Iridaceae), in which high significant antiplasmodial activity was identified [10]. The other hand, as feared, the reduction of P. falciparum border [9].

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Among the species evaluated up to the moment, the most promising is Eleutherine plicata (Iridaceae), in which high significant antiplasmodial activity was identified without significant increase of cytotoxicity. Studies in P. berghei infected mice treated with ethanolic extract from the barks of the plant showed a significant reduction of parasitemia, as well as of parameters of oxidative stress associated with the disease.

However, much is still needed in order to obtain therapeutic drugs from the extracts of this plant. Nevertheless, the therapeutic potential of Amazon’s plants is still a universe that, if properly explored, will lead to the development of more effective drugs for the treatment of malaria and many other diseases of today.

References